CATERPILLAR

Wheel Tractor-SCRAPERS

with 615 elevating scraper

AECQ9110


STANDARD


TANDEM
POWERED


ELEVATING


TANDEM POWERED
ELEVATING

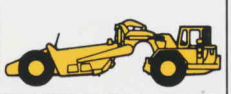
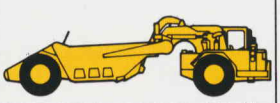
CATERPILLAR 615 ELEVATING S

Flights — high strength steel, triangular design; excellent load retention.

Double acti — for fast, p ejection con

Smooth ejection — ejection and bowl cleaning occur in one motion . . . effective metered spreading.

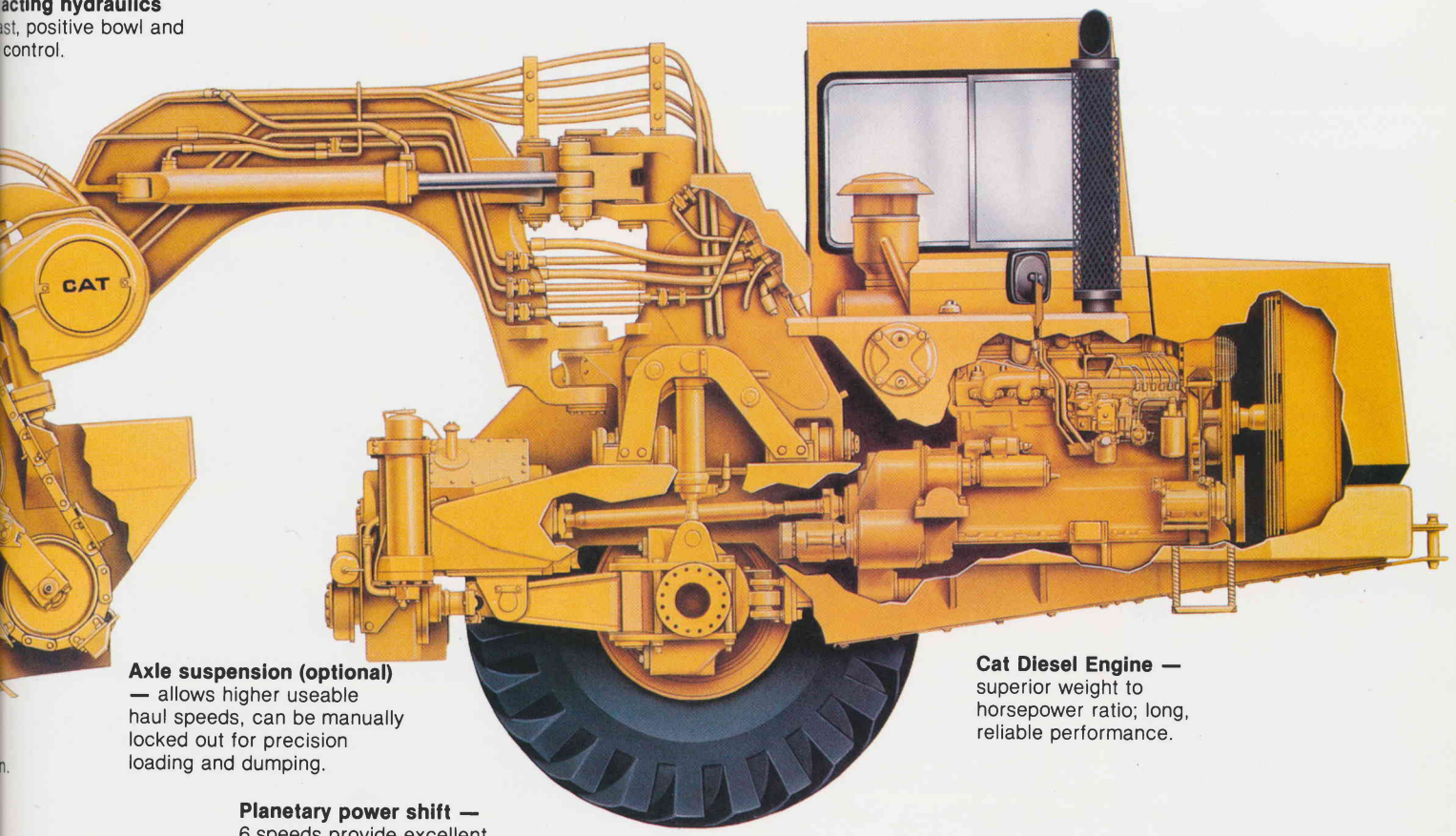
Wide bowl profile — for easy loading . . . uses high strength construction.

Configuration	Standard Scrapers			Tandem Powered and Push-Pull Scrapers		
Model	**621B**	**631D**	**651B**	**627B**	**637D**	
						
Capacity Struck/Heaped	14/20 yd³ **10.7/15.3 m³**	21/31 yd³ **16.1/23.7 m³**	32/44 yd³ **24.5/33.6 m³**	14/20 yd³ **10.7/15.3 m³**	21/31 yd³ **16.1/23.7 m³**	
Flywheel Power	330 HP **246 kW**	450 HP **336 kW**	550 HP **410 kW**	450 HP **336 kW**	700 HP **522 kW**	
Operating Weight	66,150 lb **30 005 kg**	93,790 lb **42 540 kg**	128,550 lb **58 310 kg**	75,910 lb **34 430 kg**	107,200 lb **48 625 kg**	

SCRAPER

Sound suppressed ROPS cab (optional) — meets ISO and SAE rollover standards and U.S. OSHA requirements for sound-suppression.

acting hydraulics
ast, positive bowl and
control.



Axle suspension (optional) — allows higher useable haul speeds, can be manually locked out for precision loading and dumping.

Cat Diesel Engine — superior weight to horsepower ratio; long, reliable performance.

Planetary power shift — 6 speeds provide excellent loading ranges and high haul road speeds.

	Elevating Scrapers				Tandem Powered Elevating Scrapers
657B	**613B**	**615**	**623B**	**633D**	**639D**
32/44 yd³ **24.5/33.6 m³**	11 yd³ **8.4 m³**	16 yd³ **12.2 m³**	22 yd³ **16.8 m³**	34 yd³ **26 m³**	34 yd³ **26 m³**
950 HP **708 kW**	150 HP **112 kW**	250 HP **186 kW**	330 HP **246 kW**	450 HP **336 kW**	700 HP **522 kW**
152,830 lb **69 320 kg**	30, 940 lb **14 035 kg**	50,715 lb **23 025 kg**	72,820 lb **33 030 kg**	105,200 lb **47 720 kg**	124,240 lb **56 355 kg**

SCRAPERS

Caterpillar Wheel Tractor-Scrapers meet your job requirements by offering a variety of loading configurations with capacities ranging from 11 yd^3 to 44 yd^3/**8.4 m^3 to 33.6 m^3**. For parts and service commonality, they are built in basic families: the dependable 621B, 623B, 627B group, the workhorse 631D, 633D, 637D, 639D class, while the larger 651B and 657B share engines and other components.

Over 50,000 scrapers and millions of operating hours have established a tradition of quality. Reliability is a commitment we design and engineer into every part, component, and machine. Reliability that ranges from engine ratings in working flywheel power, to solid state electronics in our tandems' transmission system.

Performance is measured in many ways, and Cat scrapers are designed to consistently meet your job demands. Simple, functional innovations such as the cushion hitch are directed at easier operation and maintaining high production. And the addition of our 615 Elevating Scraper helps increase your working range. The broadest selection of models in the industry, backed by a dependable program of services, makes Caterpillar Wheel Tractor-Scrapers an outstanding earthmoving value.

CAT DIESELS — rugged, reliable performance 6
TRANSMISSIONS — high-speed durability 8
POWER TO THE GROUND 10
CONTROLS . . . operator designed, human engineered 12
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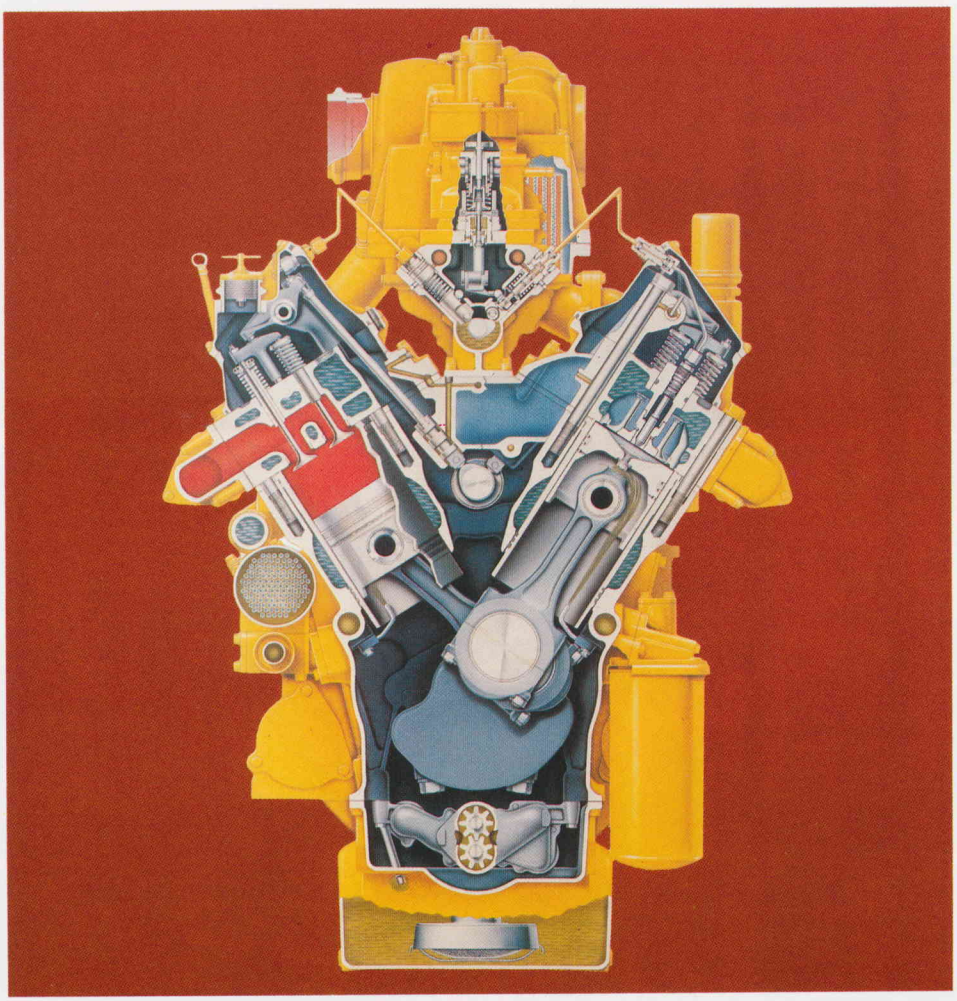
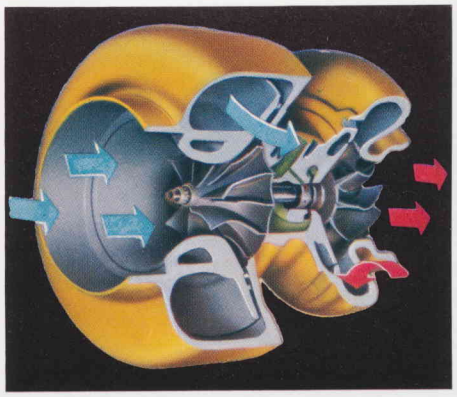
CAT DIESELS ...rugged, reliable performance





Turbocharging increases air flow through the engine to give you more usable power. Driven by exhaust gases, the turbocharger packs incoming air into the cylinders. The result is more complete fuel combustion and more power per cubic inch of displacement. Turbocharging also compensates for oxygen reduction at higher altitudes and temperatures. While the non-turbocharged 613 retains full HP to 2500 ft/**750 m**, all other Cat scrapers (turbocharged) retain full HP to 5000 ft/**1500 m** — four (621, 623, 631, 633) up to 7500 ft/**2300 m**.

By lowering intake air temperatures **aftercooling** further increases oxygen available for combustion. This boosts output and keeps machine weight low.

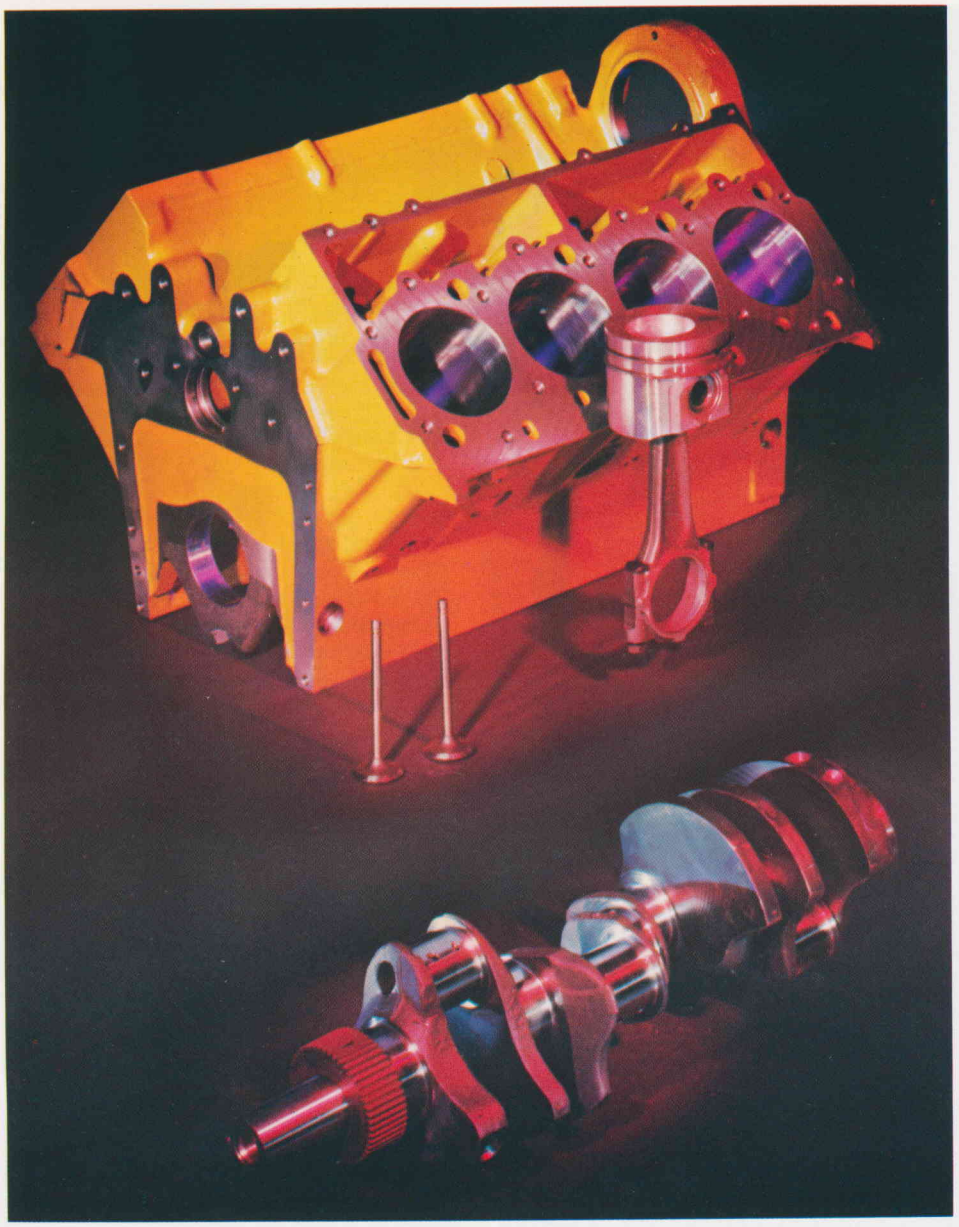
Caterpillar diesel Engines — a time tested combination of power and economy relying on proven performance and technological advancement. Cat Engines are rated in realistic flywheel power, working power that is available on the job. Efficient four-stroke-cycle design delivers economical operation on a variety of diesel fuels. High displacement-to-power ratio saves wear on engine components, extends their life. Cat Engines are the cornerstone of dependable performance in all Caterpillar scrapers.

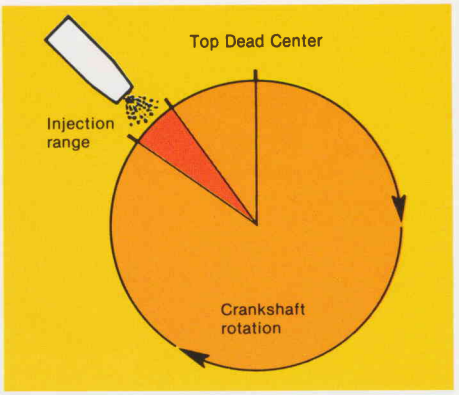
Scraper Configuration	Standard			Tandem Powered			Elevating				Tandem-Powered Elevating
Model	**621B**	**631D**	**651B**	**627B**	**637D**	**657B**	**613B**	**615**	**623B**	**633D**	**639D**
Engine Model (Tractor)	3406	3408	D346	3306	3408	D346	3208	3306	3406	3408	3408
Horsepower/kW (flywheel)	330/**246**	450/**336**	550/**410**	225/**168**	450/**336**	550/**410**	150/**112**	250/**186**	330/**246**	450/**336**	450/**336**
Aspiration	TA	TA	TA	T	TA	TA	NA	TA	TA	TA	TA
Engine Model (scraper)				3306	3306	D343					3306
Horsepower/kW (flywheel)				225/**168**	250/**186**	400/**298**					250/**186**
Aspiration				T	TA	TA					TA

NA — Natural Aspiration

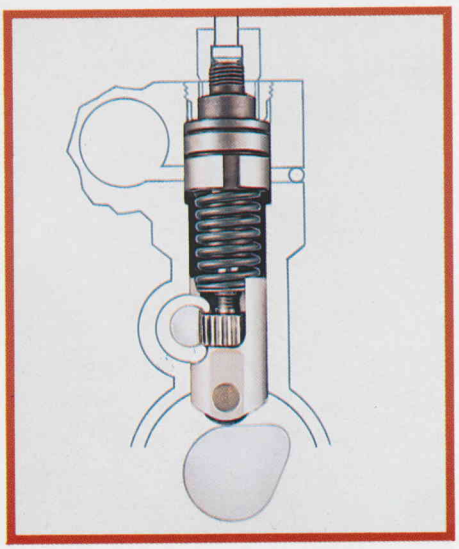
T — Turbocharged

TA — Turbocharged and Aftercooled





Variable timing automatically advances or retards fuel injection according to engine speed. The faster the engine turns, the sooner injection takes place, for more complete combustion. This aids starting, improves acceleration and increases fuel economy at any RPM.



Blocks are one-piece castings with massive internal ribbing for added strength and precision alignment of crankshaft and bearings. They are made of nickel-chrome alloyed grey iron testing to 40,000 PSI/**275 mPa**. Cat cylinder heads are cast from the same quality material.

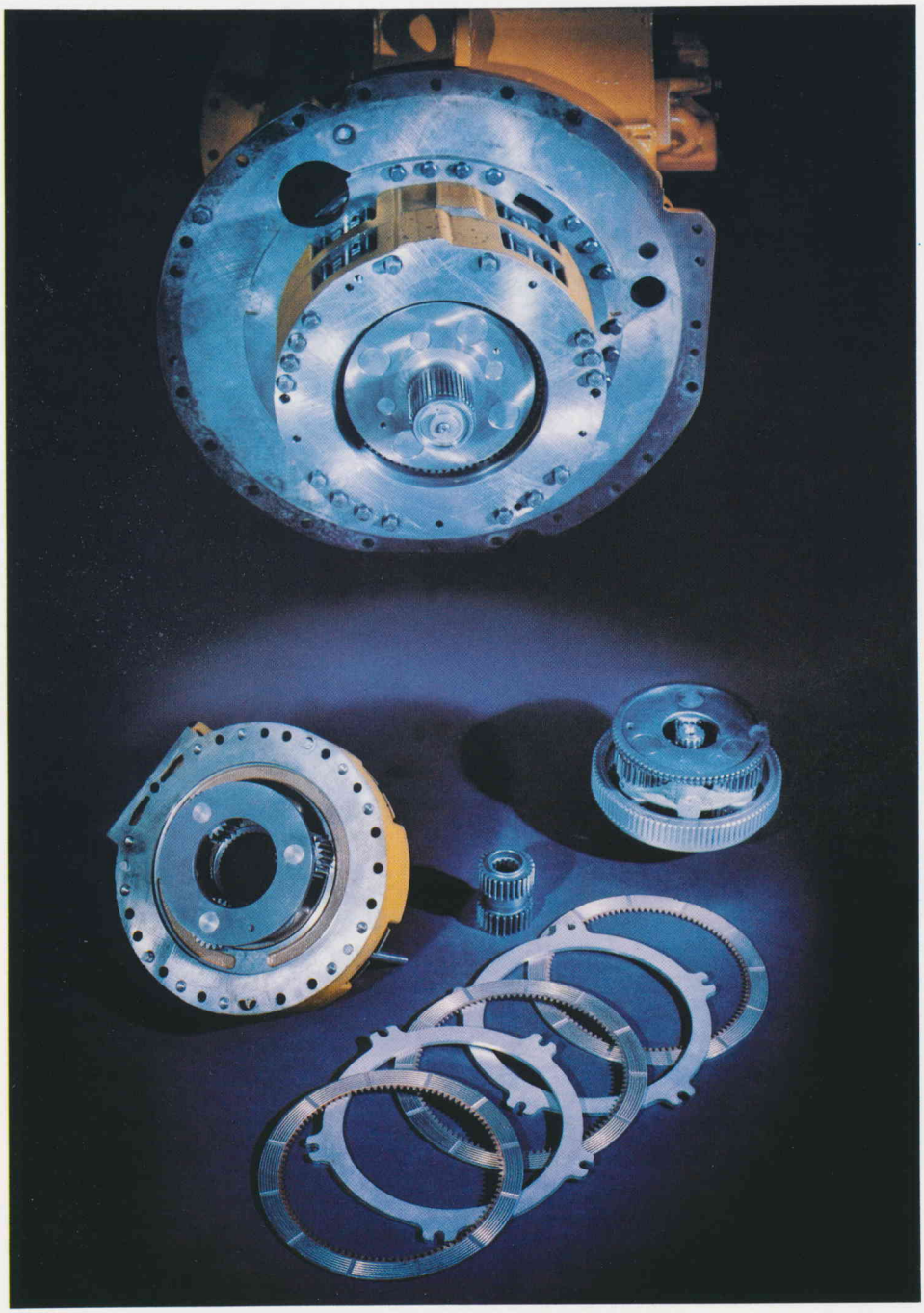
Elliptically ground and tapered pistons fit the cylinder perfectly under the heat of operation. Chrome plated piston rings mean less friction and wear for long life, less oil consumption. Compression rings ride in an iron band cast integrally into the aluminum alloy piston.

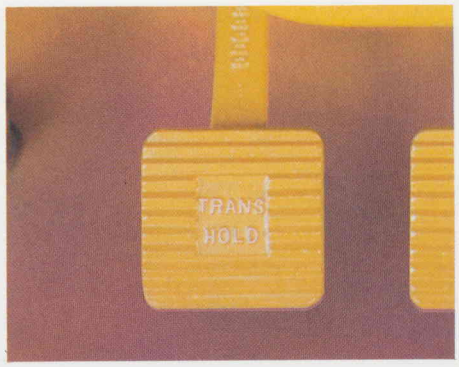
Stellite-faced valves resist warping and wear. Silicon steel throats and carbon steel stems withstand continual operating stress and combat wear. 3° rotation with each valve opening (except 3208) provides even wear and long life.

Forged crankshafts are precision ground and induction hardened. Bearing journals are superpolished to assure absolute smoothness. Static and dynamic balancing assures even, long-life performance.

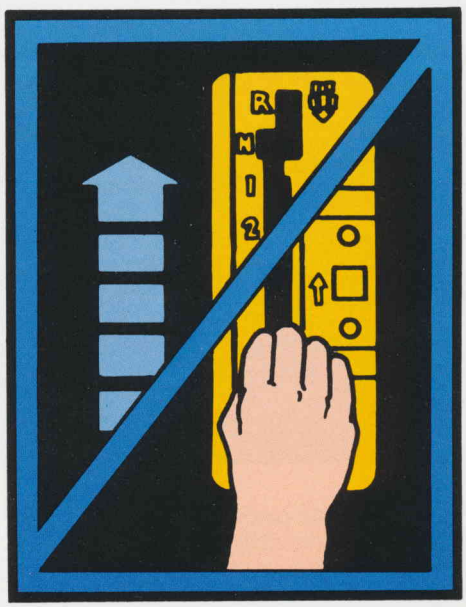
Economical adjustment-free fuel system. Individual fuel injection pumps are directly camshaft driven and precisely meter the correct amount of fuel to each cylinder. Replaceable capsule injection valves need no periodic cleaning and the system needs no rebalancing when pumps or valves are replaced.

TRANSMISSIONS ...efficient and durable





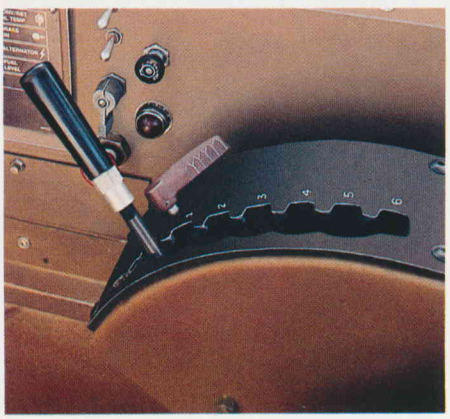
Transmission hold pedal (8-speed units) lets the operator override the automatic shift, holding the transmission in the current gear. For pump loading or increased elevator power, the transmission can be held in a lower gear. When loading, the operator can hold the transmission in second gear for torque converter drive in the cut, regardless of speed. On the haul road, the operator can select the most efficient gear for traveling in varying underfoot conditions.



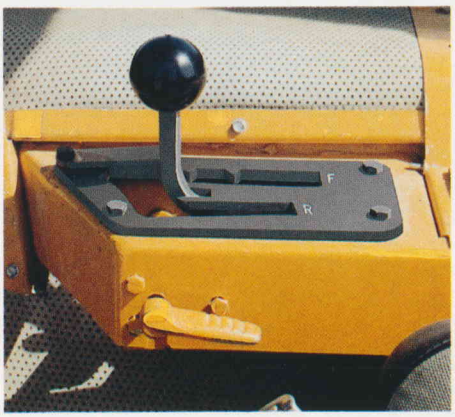
Downshift Inhibiting — Cat 8-speed transmissions are designed to prevent downshifts that would result in engine overspeed. The operator can physically move the shift lever to a lower gear but the control valve group will not shift speed ranges until the internal pressure or engine RPM for the desired gear is reached. First gear is not inhibited.

Cat planetary transmissions are built around a center shaft with sets of planet gears stacked end to end. Each set has a sun gear in the center and is mounted on a planet carrier. Each set rotates around the sun gear and inside the ring gear. Large perimeter-mounted, oil-cooled clutches offer high holding capabilities for quick response and excellent heat dissipation for longer life. Planetary design allows high reduction ratio in minimum space while distributing torque loads over three equally spaced gears.

Cat 8-speed, semi-automatic, planetary power shift transmissions provide high efficiency by eliminating torque converter drive at haul speeds above 5 mph/ **8 km/h**. Ranges 1, 2 and reverse are torque converter drive for high rimpull and full hydraulic power when loading or dumping. Third through eighth speeds are direct drive for efficiency and maximum usable haul road speeds. In cycling the operator selects the highest gear desired for the haul road and the transmission automatically shifts down to second for loading and dumping and then back to the selected range for the haul. A special valve package modulates oil pressure so clutches ease together, cushioning shocks on power train components for smooth speed change. For tough loading conditions, the operator can manually select first gear to maximize rimpull.

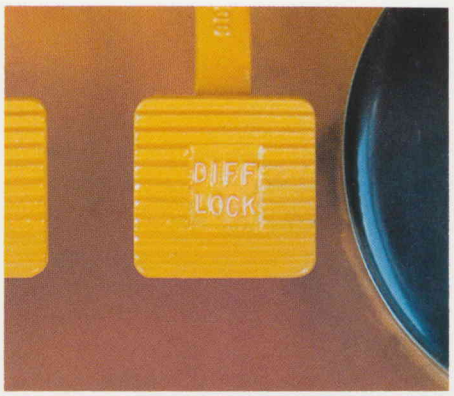


615 uses a six-speed forward, one-speed reverse planetary power shift. Transmission ranges 1 through 6 provide both torque converter drive and direct drive. Ranges 1 and 2 supply high rimpull and hydraulic response for fast loading. Automatic torque converter lock-up in ranges third through sixth provides good acceleration and top speed for the haul road.



613B planetary power shift transmission provides on-the-go shifting with four speeds forward, two reverse. Full torque converter drive assures high torque and anti-stall performance.

POWER TO THE GROUND ...in any application



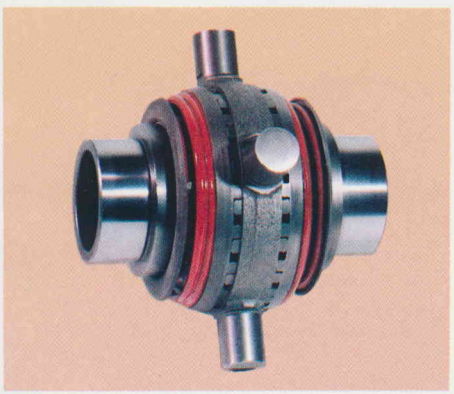
A **differential lock** pedal lets the operator create a continuous drive to both tractor wheels for working in poor underfooting. Tractor drive wheels are locked together so neither can spin free; disengaged it allows normal differential functioning. Optional on 613B.

Tire Options			613B		615		621B 623B 627B		631D 633D 637D		639D		651B 657B	
			Tr.	Sc.	Tr.	Sc.	Tr.	Sc.	Tr.	Sc.	Tr.	Sc.	Tr.	Sc.
18.00-25	16 PR	E2	●											
23.5-25	16 PR	E2	●	●										
〃		E3	●	●										
〃	*	XRA	●	●										
26.5R-25	**	XRB			●	●								
29.5-25	22 PR	E2			●	●								
29.5R-25	**	XKB			●	●								
29.5-25	22 PR	E3			●	●								
29.5-29	28 PR	E2					● 1	●						
〃		E3					● 2	●						
〃	34 PR	E2					●	●						
〃		E3					●	●						
〃	**	XKB					●	●						
〃	**	XRB					●	●						
〃	UNISTEEL	RL3					●	●						
29.5-35	28 PR	E2					●	●						
〃		E3					●	●						
〃	**	XKB					●	●						
〃	**	XRB					●	●						
33.25-29	26 PR	E3					● 3	●						
33.25-35	**	XKB							●	●				
〃	**	XRB							●	●				
〃		GSR							●	●				
37.25-35	30 PR	E3							●	●				
37.5-39	44 PR	E3											● 5	●
〃	52 PR	E3											● 6	●
〃	**	XKB											●	●
〃	**	XRB											●	●
〃	UNISTEEL	RL3											●	●
37.25-35	**	XRB									● 4	●		
37.5R-39		GSR											●	●

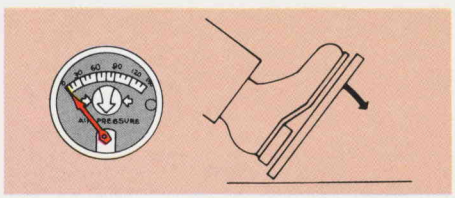
Choose your tire: model for model, Cat Scrapers usually have a wider range of tire options than any other machines you can buy. So you not only have the industry's greatest selection of scraper types and sizes, but you can also equip them more specifically for your work — with conventional or radial steel cord construction, general purpose or rock lug treads, and a range of ply ratings and Ton-MPH capacities.

1. — Optional on 627B and 621B (Std. on 623B).
2. — Optional on 623B (Std. on 627B and 621B).
3. — Not available on 623B tractor or scraper.
4. — Optional only on 639D tractor or scraper.
5. — Optional on 651B (Std. on 657B).
6. — Optional only on 657B tractor or scraper.

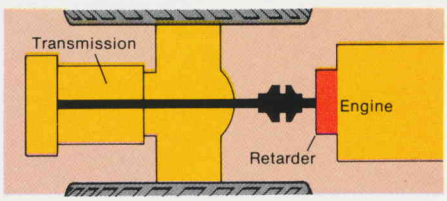
High reduction planetary final drives develop power at the wheels while keeping the torque loads low on driveline components. Tandem-powered models feature these torque multiplying planetary units front and rear. Duo-Cone® Floating Ring Seals hold lubrication in and keep dirt out. Planetary units and full floating axles can be removed independently of wheels and brakes.



NoSPIN differentials on the rear drive of Cat tandem-powered Scrapers prevent wheel spin in poor underfooting by providing driving torque to both rear wheels. If one wheel should momentarily lose traction, the opposite wheel continues to drive as both wheels regain secure footing.

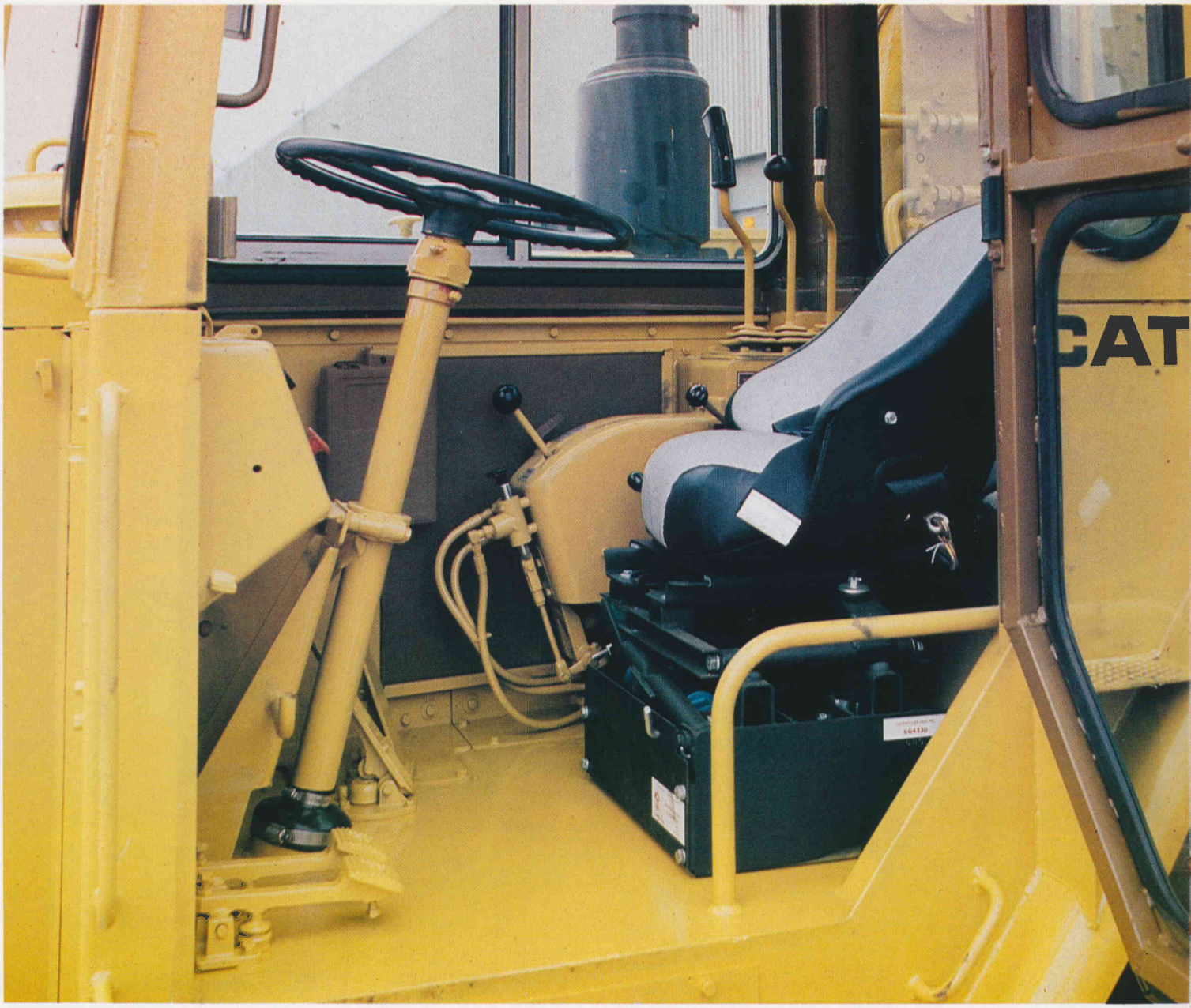


Reliable braking system is designed so no single component or line failure will cause a total loss of brakes. Brakes apply automatically when actuating pressure drops below a minimum level. A hand operated valve engages the parking brake independent of service brake actuation. The 613B uses air-over-oil actuated 4-wheel caliper disc brakes, while other models have air-controlled, cam-actuated (wedge on 615), expanding shoe brakes.



Hydraulic retarder acts on the driveline to provide additional braking for long downhill runs while extending service brake life. For efficient combination of speed and retarding effort, steering column lever allows complete modulation when the transmission is in direct drive. Retarder oil is cooled by an increased capacity transmission oil cooler, eliminating the need for an additional cooler. Retarders are standard on 651B and 657B — optional on all other models except 613B and 615. Tandem powered units use retarders on both front and rear drive systems.

CONTROL ...for performance



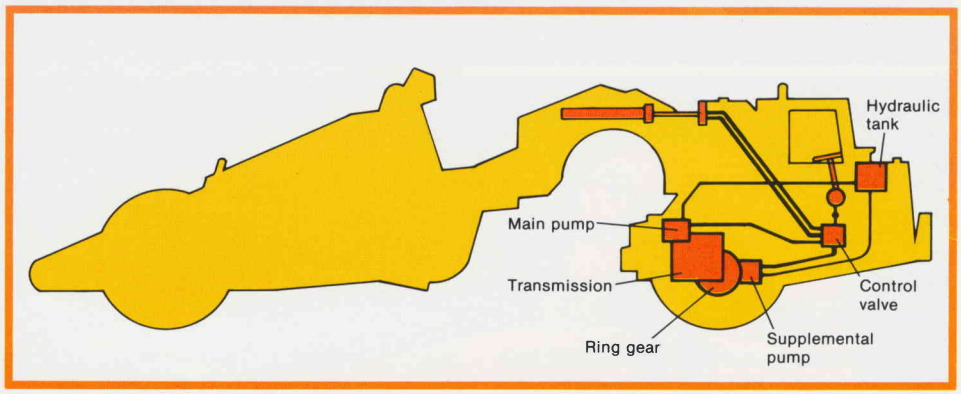
Cat Scrapers are operator-oriented machines with emphasis on protection and efficiency. Optional sound-suppressed ROPS cabs help keep the operator productive and comfortable. Rubber mounted compartment helps isolate operator from vibrations and noise as well, and special sound-suppression material inside the cab keeps the noise level below U.S. OSHA limits. ROPS mountings are an integral part of the tractor frame to further reduce noise while meeting rollover protection standards.

Visibility is essential for high production, and Cat Scrapers are designed with that in mind. Good visibility to the front for travel on the haul road — to the cutting edge for accurate loading.

Fully suspended nitrogen-over-oil seat reduces bounce for a more comfortable ride. Bucket design gives good all-around support in rough going. The seat is angled slightly to the right for excellent visibility to both the cutting edge and haul road. Dampening control meters oil flow to vary firmness. A variety of operator controlled seat positions (forward and back, up and down) improves operator balance, control, and contact. Design features add up to longer life and permit stiffness settings to match working conditions. Air suspension seat standard on 613B and 615.

Cat climate control (optional) cools, heats, defrosts, dehumidifies and pressurizes cab for year-round-comfort. Air conditioning unit includes engine-mounted refrigerant compressor with all cooling and heating components mounted on the roof. High capacity blowers provide volume air flow.

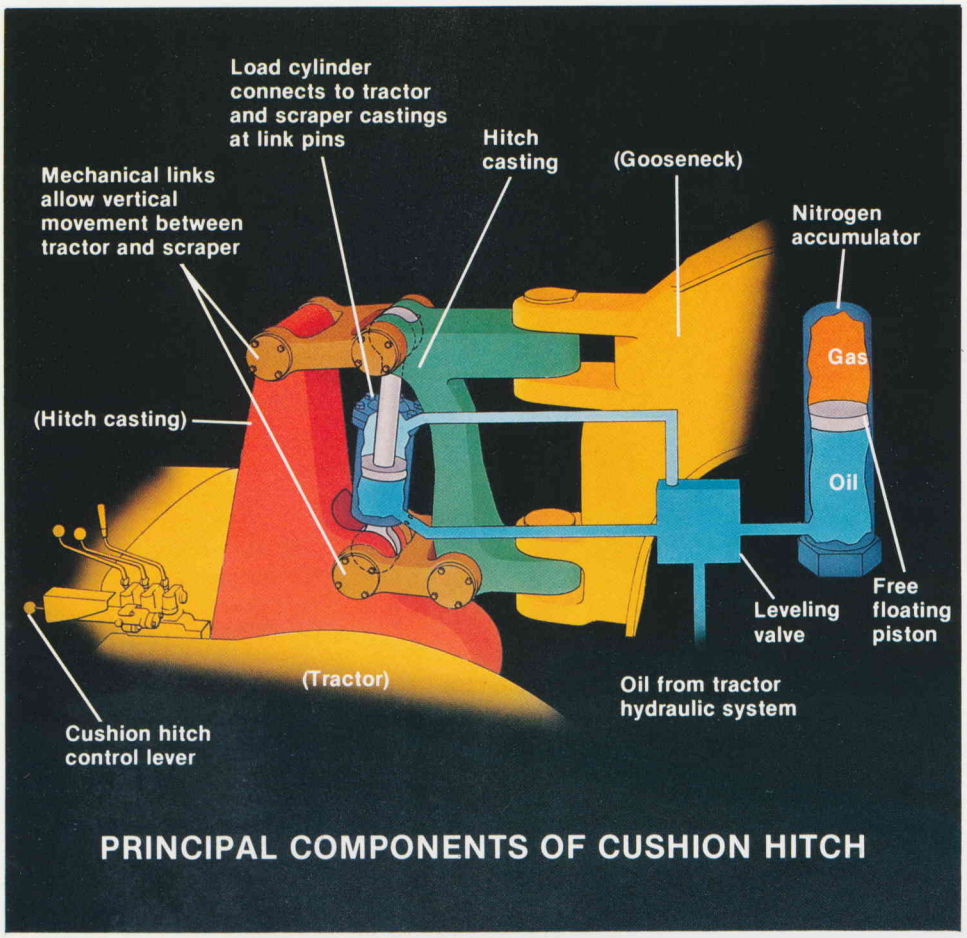
Smooth, responsive scraper controls are conveniently located at the operator's right. Bowl control has raise, hold, power down, and quick drop positions, plus a button to simultaneously lower the apron. Separate apron lever has open, hold, positive close and detented float positions. Ejector lever is detent-held in return position and kicks out when ejector is properly seated, freeing operator for steering and shifting. Ejector control also has dump and hold positions.



Full hydraulic steering provides easy control and quick response. Automotive-type feel means greater operator confidence. 90° turns provide excellent maneuverability and reduced cycle time. (651, 657 with ROPS are restricted to 80° when turning left.) In addition to the normal steering pump, an optional second pump, driven off the differential ring gear, supplies hydraulic steering for emergency use with a dead engine. This ground-driven system is available as a factory installed attachment on all models.

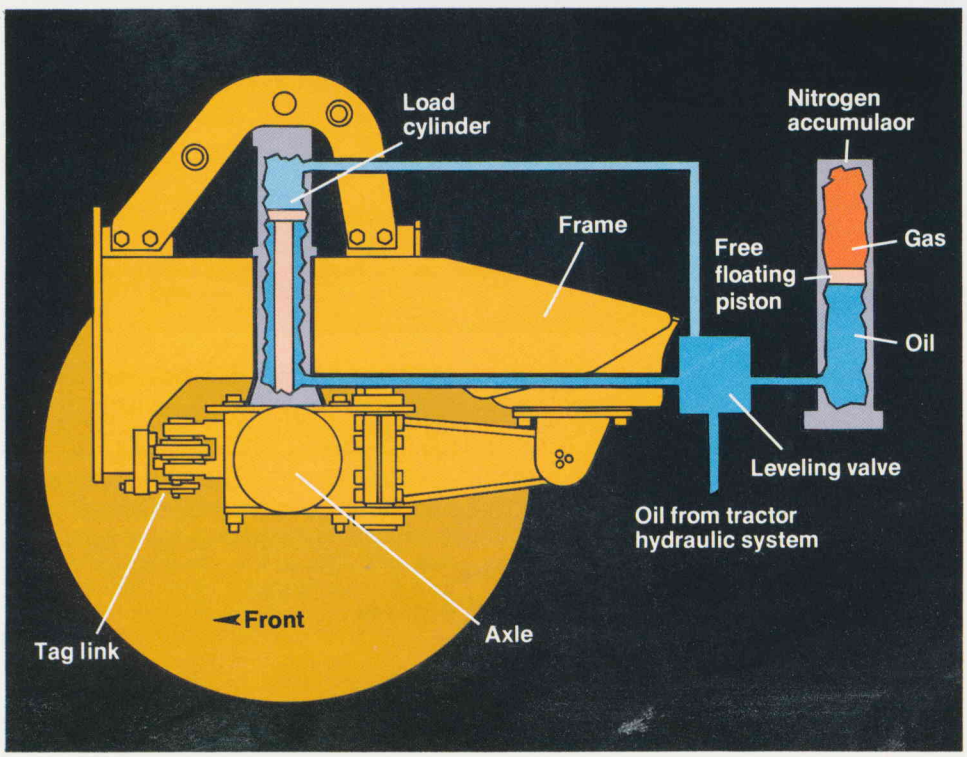
613B and 615 variable flow modulated steering is an automatic, accelerated two-speed system. The first stage gives normal steering response, while the second allows the machine to turn faster when steering wheel movement is increased. A modulating valve meters hydraulic flow to the steering cylinders to match increased steering wheel movement.

SUSPENSION SYSTEMS



PRINCIPAL COMPONENTS OF CUSHION HITCH

Caterpillar's Cushion Hitch, standard on all models except 613B and 615, improves production by providing a shock dampening connection between tractor and scraper. Less bounce means higher usable haul road speeds and reduced stress on the operator and machine components. Limiting machine loping helps keep travel speed high and preserve haul roads. Pivoting linkage, with a hydraulic cylinder connected to a nitrogen-over-oil accumulator, dampens shock and allows differing movement between tractor and scraper. A leveling valve behind the hydraulic piston keeps the hitch centered. On the cut or fill, the operator can lock out the system for positive control of the cutting edge. By using filtered oil from the scraper hydraulic system, there's no need for additional oil or filters.



615 axle suspension system, an option, consists of two load cylinders and a nitrogen-over-oil accumulator which functions similar to the cushion hitch. Axle suspension can contribute to increased production depending on haul conditions. Less bounce means higher useable haul road speeds and a more confident, comfortable operator.

Road shocks transfer hydraulic oil from the load cylinders to the accumulator, which compresses and expands the nitrogen according to the severity of the shock. A tag link helps prevent axle sidesway and is mounted horizontally between the differential and the tractor main frame. A selector lever allows the operator to lock out the axle suspension to create a positive, solid axle for precision loading or dumping. The standard 615 tractor frame has accommodation for the optional system for installation in the field or shop.

THE SCRAPER

Caterpillar's low, wide bowl profile means quick, easy loading. Volume loads are scooped from shallow cuts with the wide cutting edge. Low design offers less resistance to incoming material, quickly building production rated loads. Cellular construction of bowl sides and floor adds strength and dent resistance. Lower bowl structure is wear resistant and strengthened by gussets; quenched and tempered steel with a yield strength of 90,000 psi/**620 mPa** is used here and in router and edge supports, floor plates and high abuse areas. Floor structural channels are fillet welded to top plate, plug welded to bottom plate. All other material is high strength, low alloy steel of 42,000 psi/ **290 mPa** yield strength.

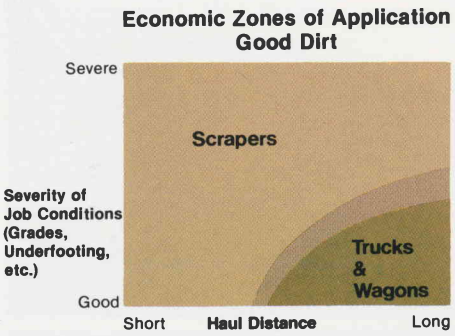
Inside-mounted apron reduces bulldozing by hinging the apron above the cutting edge. It swings up in a true radius, out of the way of material, not forward. The load is retained by a double acting hydraulic cylinder that closes the apron.

Cat bulldozer ejection system found on standard and tandem powered scrapers combines spreading control with bowl cleaning efficiency for smooth ejection of material. The positive bulldozer-type ejector is actuated by smooth, double acting hydraulics. Angled top plate helps retain the load on the haul and creates material rolling action when dumping.

SCRAPER SELECTION

When analyzing your production needs there are a number of factors to consider in selecting a material handling system. Caterpillar offers the widest selection of any scraper line in the industry. So whatever your job conditions or requirements, Caterpillar offers the scraper best matched to your needs. Here's a checklist to help you isolate factors affecting your scraper selection.

1 **Economically, a scraper job.** As application conditions improve from rough rock, scrapers become the economical choice opposed to other systems. In dirt applications even limiting factors such as adverse grades and poor underfooting favor scrapers, with exceptional haul distances raising the possibility of trucks and wagons.



2 **Size.** Bigger is better but . . . job size in terms of material and maneuvering space must be large enough for the bigger machine. Annual work volume must provide sufficient working season, and costs of transporting to other job sites must be considered for large machines.

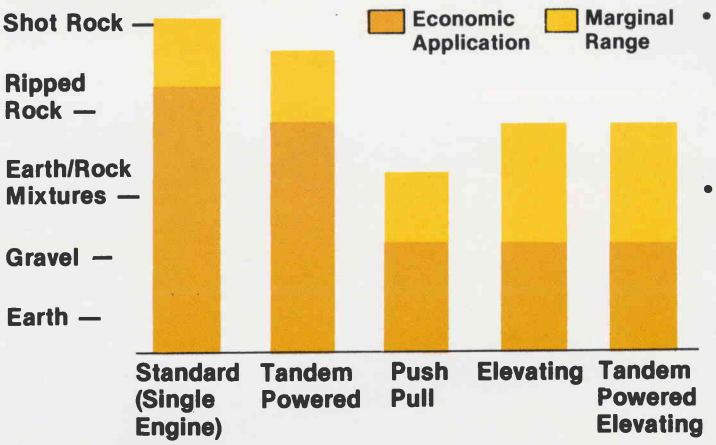
3 **Scraper Configuration**

	Standard	Tandem Powered	Push Pull	Elevating	Tandem Powered Elevating
Grade Resistance	Slight	Steep	Steep	Fairly Flat	Moderate
Rolling Resistance	Average	High	High	Low	Moderately High
Underfoot (Loading)	Rocky to Moderate	Moderate Rocky to Sticky	Sticky	Moderate to Good	Moderate
Loading Method	Pusher	Pusher or Self	Self Team	Self	Self

Considerations

- ability to handle adverse grades
- ability to negotiate material affecting tire penetration
- flotation and traction factors as they relate to loading. Tire costs are critical here.
- ability to get in and out of cut area
- consider costs of pusher and operator vs. other methods

4 **Material Appetite**



- Elevating scrapers (623, 633, 639) have extended marginal range due to capabilities of the variable capacity torque converter.
- Push/pull system limited by tire costs and slippage when loading in rocky material.

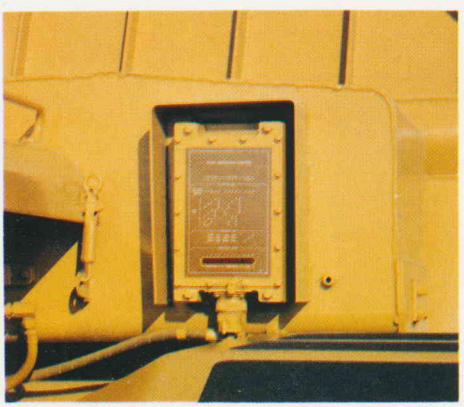
The bottom line is still cost per yard. The above information is framed by economic considerations and recommended operating limits, but the combination of factors on your job must involve careful evaluation. Your Cat dealer can assist you in the sophisticated process with computerized application analysis designed to match the right scraper to your individual requirements.

STANDARD Scrapers

Rugged Caterpillar standard scrapers deliver low cost earth-moving in a variety of material. These versatile single-engine machines allow you to work in applications ranging from clay to shot rock, and are excellent for long, flat, high speed hauls. Three models available allow you to choose a size to meet your production needs.

TANDEM POWERED Scrapers

When your job calls for negotiating steep grades or soft, slippery underfooting, Cat tandem powered Scrapers can prove to be a profitable selection. The added power of the second engine produces an excellent weight-to-power ratio which, with four-wheel drive, makes Cat tandems all-weather workhorses. NoSPIN differentials on the rear axles give these scrapers a more positive traction drive under varying underfoot. An optional push-pull configuration increases versatility by allowing teams to load each other and travel independently to the fill. No matter which way you work them, Cat tandem powered Scrapers mean production.

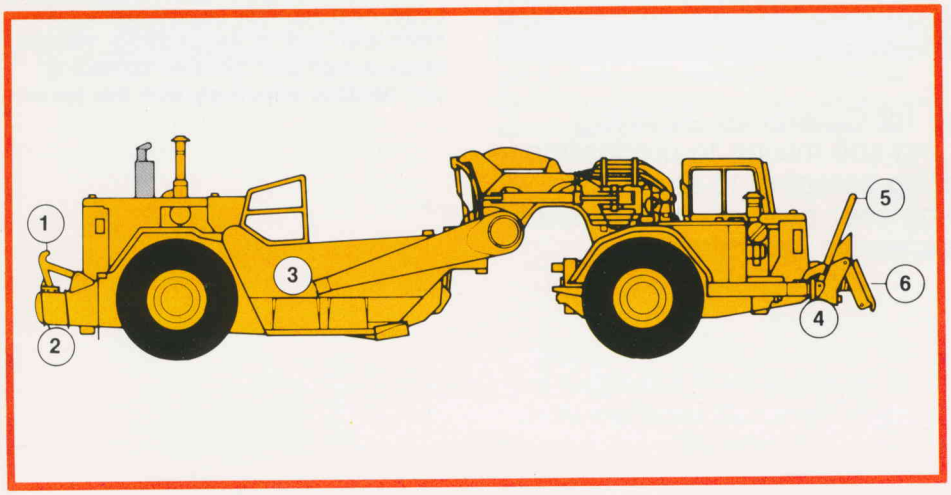


Caterpillar 627B, 637D, 639D and 657B now feature **solid state electronic transmission shifting.** An electronic control box, located adjacent to scraper power package, receives an impulse sensing tractor gear position and shifts the scraper transmission accordingly. This matches the scraper transmission to the tractor's eight-speed semiautomatic for optimum loading and hauling capabilities. The control box for the system features gear position LED readouts to speed troubleshooting.

Separate rear start improves serviceability and reliability of the electrical starting system. With engine and transmission having separate wiring harnesses, electrical lines across the hitch are reduced.

PUSH-PULL Scrapers

Cat tandem powered Scrapers can also be utilized as a push-pull system, eliminating the need for a push tractor. These two-machine teams can load each other in about the same time as one elevating scraper can load itself. The flexibility of self-loading results in faster cycle times and reduces bunching, a big economic advantage on short-haul jobs. The push-pull system also eliminates pusher/scraper mismatch.



Components

1. Hook — Heavy duty fabricated seamless tube.

2. Pushblock — Extends beyond hook so flush contact can be made with pusher.

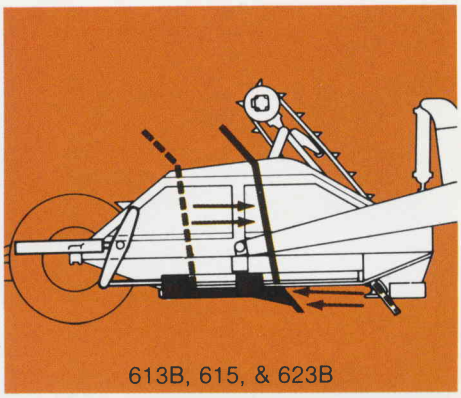
3. Pivot pin area — Reinforced through main frame to withstand forces of push-pull application.

4. Bail bearings — Self aligning, prevent bending from side forces.

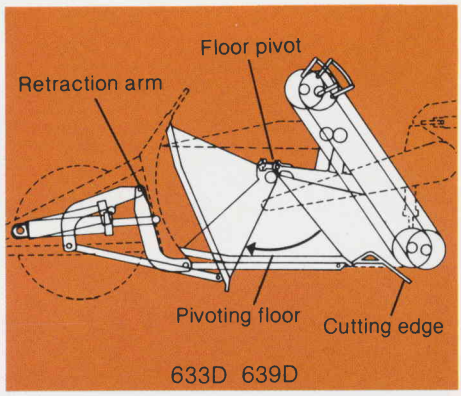
5. Bail — Strong heat treated casting in nose resists wear. Automatic release after loading completed.

6. Push plate — Fabricated and cushioned. Rubber biscuit mounting absorbs shock.

ELEVATING Scrapers



613B, 615, & 623B



633D 639D

Ejection. 613B, 615 and 623B feature a smooth two-stage ejection system. The first stage allows the operator to slide the scraper floor and cutting edge back, up to half the floor length for a large opening. Then the dozer-type ejector moves forward to the cutting edge. This positive force allows ejection and bowl cleaning to occur in one motion.

The 633D/639D has a unique ejection system allowing the entire floor to pivot back and up, away from the fixed cutting edge. Pivoting floor helps clean bowl sides and back in wet or sticky material. Mass dumping or metered spreading can be done effectively with this system.

Work-alone capability is a big edge for Caterpillar elevating scrapers. From windrow cleanup and soil mixing to production hauling, you can rely on our elevating scrapers to self-load quickly and keep on working, freeing your production machines from push loading and you from excessive downtime.

Elevator speed and direction controls allow the operator a two-speed forward and one-speed reverse operation.

Flexible elevator mounting on 613B, 615 and 623B uses four bar linkage to protect both flights and cutting edge from sudden shock. Elevator assembly is free to move forward, up and away from large obstacles, yet returns quickly to continue loading. An upstop on the elevator limits upward travel. The 633D and 639D elevators have dual mountings on the pivoting floor assembly.

Engine driven implement pumps power the hydraulic motor for the elevator. The motor drives through a planetary gear reduction box to a live, double sprocket shaft. This high torque drive system enables the operator to take deeper cuts or load in shorter distances with less elevator stall. The operator can select a high production loading depth without repeated adjustment.

Hydraulic drive system is sealed and filtered, trapping particles before they get a chance to damage components. By eliminating breather-type venting, the circuit stays free of dirt for longer life.

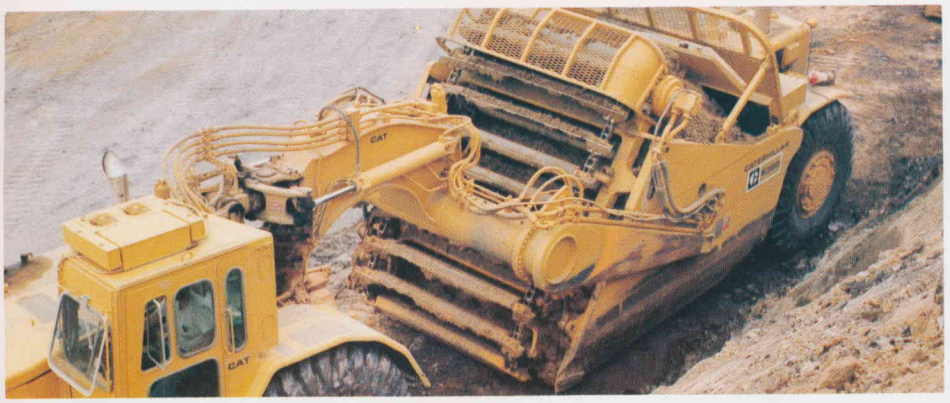
Flights are modified box-section (triangular on 613B) high strength steel with lateral I-beam support across the flight face. This allows flights to withstand high forces and tough loading.

Elevator chains have exceptional pull strength. Rollers, pins and links are specially hardened to resist abrasion. Chain tension is hydraulically adjustable, resulting in dependable performance and long life.

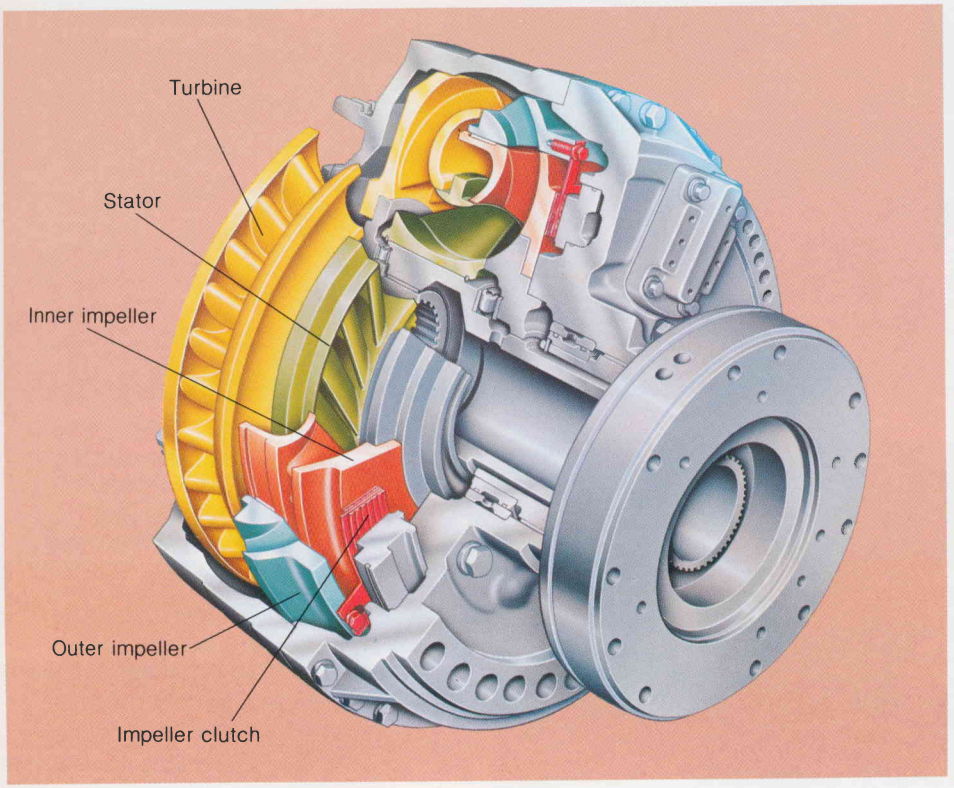
Drive sprockets are lifetime lubricated. Carrier rollers and idlers are heat-treated for wear resistance. Split bolt-on sprocket rims eliminate need to remove chain during service renewal.

TANDEM ELEVATING Scraper

Now you can employ the work-alone capability of an elevating scraper with the all-wheel drive of a tandem powered unit. The Caterpillar 639D tandem powered elevating scraper has the ability to meet a wide range of earthmoving needs. Comparative economics show the 639D to be profitable when conditions include short cut and haul, tight maneuvering, steep grades and poor underfooting. A member of the workhorse 631D family, the 639D has the same power plant system as the 637D and a loading system similar to the 633D. The 639D ejection system functions the same as the 633 with a pivoting floor and elevator mounting to allow a forward shift for clean dumping or spreading. Dual ejection cylinders (rather than one) accommodate the scraper engine in the push frame.



Modified elevator flight spacing lets you take advantage of the additional power available for self loading. The 639D has 16″/**406 mm** flight spacing, 8″/**203 mm** closer than the 633D.



Variable capacity torque converter on the 623B, 633D and 639D lets the operator vary the area of the impeller by means of a clutch to meet power requirements. High rimpull situations can be handled by locking the outer and inner impeller, increasing total impeller area. There are two load range settings. The first is useful for deep, short cuts where full hydraulic power is required with minimal rimpull. The second range gives a higher travel speed for longer loading distances and for use in poor underfooting. This system lets the operator manually limit the power directed to the wheels (rimpull), making more power available to the hydraulic system for optimum elevator performance . . . less wheel spin and tire wear . . . greater loading efficiency.

SPECIAL ARRANGEMENTS

A coal scraper arrangement is available for Cat 627B, 637D and 657B tandem powered Scrapers. These machines are a real advantage when high volume, long haul coal handling is required, from stockpile construction to reclamation. Longer, higher bowls increase volume capacities 50 to 60% over standard tandems. These scrapers are self-loading, have excellent grade-ability and deliver a high degree of compaction.

Special Application Scraper is available for the 631D and 637D to handle demanding rock or highly abrasive material. The complete bowl is box-sectioned and higher strength steel is used throughout. In high wear and stress areas, SA scrapers for the 631D have 3000 lb/**1360 kg**, for the 637D, 3340 lb/**1515 kg** more steel. Extensive heat treatment is used in bowl bottom plates, side bottom rails, apron lip, apron front sheet, cutting edge support, router bit support, ejector front sheet and bottom rails.

Options for your application

Attachments	Standard			Tandem Powered			Elevating				Tandem Powered Elevating
	621B	631D	651B	627B	637D	657B	613B	615	623B	633D	639D
Air Conditioner/Heater — Comfortable climate control means greater operator efficiency	●	●	●	●	●	●	●	●	●	●	●
Back Up Alarm — Standard in U.S.A. Gives audible warning alarm when transmission is in reverse	●	●	●	●	●	●	●	Std	●	●	Std
Brake Shields — Longer life by protection from dirt and abrasives	●	Std	●	●	Std	●			●	Std	Std
Special Application Cutting Edges — Available for abrasive conditions or rocky material	●	●	Std	●	●				●		●
Differential Lock — Creates a continuous drive for poor underfooting	Std	Std	Std	Std	Std	Std	●	Std	Std	Std	Std
Reversible Blade Fan — Double duty as suction or blower fan depending on the season			●			●					
Fast Fuel Filler — Cuts Fueling time up to 80%	●	●	●	●	●	●			●	●	●
Fast Oil Change — Makes servicing easier	●	●	●	●	●	●			●	●	●
Fenders, Scraper — Protects operator from kick-up hazards; Meets SAE standards	●	●	●	Std	Std	Std	●	●	●	●	Std
Heater/Defroster — Assures operator comfort and improves visibility	●	●	●	●	●	●	●	●	●	●	●
Heater, Engine Coolant — Easier starting in cold conditions	●	●	●	●	●	●		●	●	●	●
Hood Door (right side) — Sound suppression and vandalism protection	●	●	●	●	●	●			●	●	●
Hydraulic Retarder — Provides additional braking, extends service brake life	●	●	Std	●	●	Std			●	●	●
Optional Tires — Available for varying job conditions (see page 10)	●	●	●	●	●	●	●	●	●	●	●
Power train Guard — Protects engine, transmission and other components from impact	●	●	●	●	●	●			●	●	●
ROPS:											
Canopy — Meets all SAE and ISO protection criteria	●	●	●	●	●	●	●	●	●	●	●
Cab, Sound-suppressed — Keeps noise level below OSHA limits	●	●	●	●	●	●	●	●	●	●	●
Starting Receptacle — Allows use of external starting power source	●	●	●	●	●	●	●	●	●	●	●
Supplemental Steering — Provides steering in case of line failure or pressure loss	●	●	●	●	●	●	●	●	●	●	●
Special Application Scraper — Built specially for rock		●			●						
Coal Scraper (Cat Custom Shop) — Bowl capacity increased for production coal hauling				●	●	●					

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Downtime hurts. That's why your Caterpillar Dealer offers you more than just a scraper. He offers you a program of services, backed up by trained servicemen and dependable parts delivery . . . helping you reduce downtime and get more production, more life from your Cat built equipment. With:

Product Application Service that employs computer analysis of your job requirements to determine the correct type and amount of equipment you need to perform your job efficiently.

Inspection Programs to catch problems before they mean major repairs. Scheduled oil sampling and on-the-job technical analysis monitor equipment performance to maintain top running condition.

Component Exchange allows engines, transmissions and major components to be replaced without extensive downtime. Rebuilt units put your machine back on the job fast.

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AECQ9110
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PRINTED IN U.S.A.